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AMERICAN VETERINARY REVIEW,

AUGUST, 1877.

ORIGINAL ARTICLES.

PERIOSTITIS.

By A. A. Holcombe, D. V. S., N. Y.

Inflammation of the periosteum is a disease of more frequent occurrence in cities than in country districts, and the fact is due to the kind of work performed, the character of the roads, and the continual exposure to contusions. Horses doing rapid track-work are liable to this disease, from the constant concussion to which the bones of the limbs are subjected, and more especially is this true of young horses, whose bones are not completely developed. Periostitis is either acute or chronic in character, the latter form occurring much more frequently than the former. When speaking of the periosteum, it is not customary to include that loose layer of cellular tissue, rich in cells, lying upon the periosteum proper, and containing an intimate network of blood-vessels; yet it is this outer layer of the periosteum which is the most frequent seat of primary inflammations, the deeper parts being less inclined to disease from the tendinous character of the tissue, and the scarcity of cells and vessels.

From the intimate relations existing between the articular capsule and the periosteum, the diseases of one readily passes to the other, so that there is often noted an intimate connection of the two.

Inflammation of the periosteum, begins with a high fever, and frequently is ushered in with a chill. The part affected is very painful and soon swells, the skin becoming tense and usually edematous. The affected limb is pointed or held up, every touch or jar seeming to cause intense pain. It is not difficult to diagnosticate this disease when the above symptoms are present, if we remember that idiopathic inflammation of

the cellular tissue covering tendons and muscles hardly ever occurs, and that when it does it seldom begins with so much pain. Where we have acute periostitis, it is not unusual to have osteomyelitis accompanying it, or we may have osteomyelitis independent of the periostitis, in which instance there will be the symptoms of periostitis, minus the swelling, which does not come on for several days. If the periosteum be examined at this period of the disease (third or fourth day), the blood vessels will be found distended with blood, and the tissue infiltrated with young granular cells, or in other words we have plastic infiltration. If osteomyelitis is present also, there will by extravasations into its substance, so that it assumes a purplish-blue tinge, instead of the normal bright yellow color. If proper treatment is used at this stage, complete recovery may be effected. If it is allowed to progress further, a part of the exudate upon the surface of the bone, becomes ossified, and the bone is left thickened. This thickening may be permanent, or it may be absorbed in the course of time. But all cases of acute periostitis do not have so favorable a termination, in fact a great percentage of them run on to suppuration. In these cases the joints in the neighborhood of the diseased bone swell and become very painful, the constitutional symptoms are severe, the patient eats but little, loses flesh rapidly, and seldom lies down. In about two weeks time pus will be detected, and puncturing of the abscess will give relief. If the pus has collected between the loose and the deeper layers of the periosteum well and good, but if it is beneath the periosteum proper the bone will be denuded, and the greater this destruction of periosteum the more severe are the symptoms. After the pus is evacuated the cavity may rapidly fill up, the soft parts adhering to the denuded bone, and ultimately forming a new periosteum. In other instances, the cutting off of the supply of nutrition to part of the bone, by reason of the destruction of the periosteum, necrosis will follow, but before the chronic inflammation of necrosis supervenes, acute suppuration will continue for a time, and it is during this period that various complications may occur, the most serious of which is pyæmia. Whenever a patient in the above condition is found with fever they are in danger.

The osteomyelitis which accompanies acute periostitis so often, may also terminate in suppuration, and if the disease is diffuse the entire medulla may suppurate. If extensive suppurative osteomyelitis accompanies suppurative periostitis, death of a considerable part of the bone must result, and if the suppuration becomes putrid in character, septicaemia will be likely to supervene.

The articular inflammation spoken of above usually terminates favorably, the serous effusion into the joint being reabsorbed as the disease of the bone subsides, although the joint may remain permanently enlarged and sometimes stiff. Fortunately this acute form of periostitis and osteomyelitis, is much more rare than the chronic form of which we see so much in veterinary practice. The symptoms of chronic periostitis are slight pain, some swelling of the parts around the diseased bone, pressure causing severe pain, and leaving the impress of the fingers evident. This form of periostitis unless cut short will end either in ulceration of the surface of the bone (caries), or in the deposit of bone-salts upon the surface. Chronic inflammation of the periosteum, may last for months or even years, and subside as gradually as it began. Microscopical examination shows a distention of the blood vessels and plastic infiltration of the loose, or outer layer of the periosteum. If there be present also superficial chronic ostitis, the pain will be greater than where periostitis occurs alone. According to Billroth, the deposit of osseous tissue, which takes place upon the surface of the bone, as a result of chronic periostitis comes first from the bone, and as the deposit proceeds outward, the periosteum assists in the deposition of the calcareous salts, and hence plays only a secondary part, instead of being, as was formerly supposed, the only tissue engaged in the new formation.

The treatment of acute periostitis, must be severe and resorted to early. The part of the limb affected, should be well blistered with cantharides ointment, or painted with strong tincture of iodine, and the animal allowed to rest in slings. Purgatives and diuretics will do good by acting as derivatives. If there is suppuration with continuous fever, the application of cold will relieve the pain. In the treatment of chronic periostitis and superficial ostitis, entire rest is the first important step to be enjoined, and as our aim in treating is to induce resolution, the use of antiphlogistics, and the application of cold do but little good, and are really a waste of valuable time. Strong counter-irritants should be resorted to at once, as firing, blistering, &c.

If suppuration has taken place, the pus must be let out with the scalpel, and the wounds treated as is commonly done. If caries is present, the diseased bone tissue must be removed, and the cavity allowed to fill up with healthy granulations, after which the healing of the wounds of the soft tissues will be easily effected,

[TO BE CONTINUED.]

ANATOMY OF REGIONS.

Translated from Peuch and Toussaint's, Précis de Chirurgie Vétérinaire.

By A. Liautard, M. D. V. S.*

FIRST SECTION.—THE HEAD.

Taken as a whole, the head represents, in domestic mammalia and specially in the large ones such as the horse and the ox, a kind of four faced pyramid, attached to the neck by its base and whose apex corresponds to the lips.

The great axis of the head is ordinarily inclined, forming an angle of 45° with the horizontal plane, but this position may be modified by different causes, such as a rapid gait or the act of sleeping. For the sake of study, we will consider it as being nearly vertical, and thus will recognize in the head an *anterior*, *two lateral* and a *posterior* face, in which we will examine the different regions of which it is composed; the *base* of the head is united to the superior part of the neck, the lips which form its *apex* will be examined in the anterior and posterior faces.

This division seems to us better than that by which the head is divided into a cranial and and a facial portion, as done in descriptive and in topographical human anatomy; for the small extent of the cranium in the domestic animals and its connexions with the face, would render a division of that kind somewhat obscure and rather unnatural. We will, however, have occasion to show the limits of the encephalon when speaking of the regions which surround it, and when describing it.

CHAPTER I.

ANTERIOR FACE OF THE HEAD.

Its boundaries being very natural need not be indicated, its longest diameter extends from the occipital protuberance to the point of the nose, its largest transversal dimensions exists on a level with the orbits, and it diminishes going towards the nostrils. The whole of its middle parts forms a straight line. Those two extremities, the protuberance and the superior lips, look backwards. Like all the parts occupying the medium line of the body, the anterior face of the head is perfectly sym-

* See Editorial.

metrical. It presents three regions: *fronto-parietal*, *nasal* and *superior labial*; we will also describe in it the *olfactory apparatus*.

SECTION 1. FRONTO-PARIETAL REGION.

Having for base the anterior face of the frontal bone, and the portions of the parietal, situated between the two crests, this region has the form of a lozenge; the superior angle of which runs up to the origin of the mane (the fore-lock), the inferior is resting upon a line uniting the internal angles of both eyes, and limiting the nasal region; on the sides the fronto-parietal region is bounded by the temporal and orbito-palpebral regions.

The forehead has more or less extent; its width and height are characteristic beauties of pure breed, they give to the head a square form, the finest and the best, as indicating a larger development of the brain. In animals with square forehead, the fronto-parietal surface is perfectly flat; but, it is often found convex. This is a defectuous character, when persisting in adult animals; its results of a peculiar condition of the frontal fissures. In young subjects, the forehead, on the contrary, always presents a convex surface, so much more developed as the animal is younger.

This is due to the small development of the facial part of the frontal bone, and of the bones of the face, compared to those which form the cranial walls. The fissures properly speaking, do not exist in the fœtus, and begin to show themselves in the young animal, only after a certain age.

The skin of the frontal region is little movable; it is furnished with short hairs, which ordinarily form a radiated spot in the middle of the forehead.

Between that tegument and the bone, there is only a fibrous layer; somewhat thick, representing the epicranial aponeurorosis of man, it is strongly adherent to the periosteum, and attached to the skin by a very thin fascia, and thus is easily isolated.

The skeleton of that region is formed at its superior parts, by the portion of the parietal bones included between the parietal crests, and by the whole surface of the flat portions of the anterior face of the frontal. In the thickness of this bone, we find the two frontal sinuses, cavities hollowed between the plates of the bone, entirely in front of the cranium, and separated from each other, by a bony lamella, almost median and always imperforated. Each frontal communicates with the corresponding maxillary sinus, by a wide opening at its inferior wall.

To be sure to penetrate to the cavities of the frontal fissures, trephining must be done upon a line a little superior to one which would unite the internal angles of both eyes. An opening made on one side of the median line, penetrates on the corresponding sinus only; if both cavities are to be open, it is indispensable to trephine on each side of the median divisions, or to use a very large instrument, and apply it on the septum dividing the two sinuses.

The *blood vessels* are of little importance, as they generally are in median regions. Only small arteries, ramifications of the ascending terminal branch of the glosso-facial, and of the temporal arteries are found; the veins empty into the angular of the eye and the anterior auricular; the nerves come from the anterior auricular plexus.

DIFFERENCES.—In the *ox*, this region ought to be called the *frontal*, as it is the bone of that name only which forms its skeleton, the parietal is found further towards the base of the head. Much wider than in the horse, it occupies more than the two thirds of the anterior face of the head, and descends down to a level of the anterior half; it also comprehends the horns, whose form and dimensions vary considerably, according to the age, the sex and the breed of the animals.

The horn rests upon a shorter bony rod, of same form and direction. This rod is rough, perforated with holes, continued on the external surface by fissures, it is hollowed internally by cavities communicating with the sinuses of the anterior face. These surround the cranial cavity, in such a way that the trephining of the frontal in cattle always opens into these cavities, no matter on what part of the bone the operation is performed. These sinuses are in connection with similar cavities of the parietal, occipital and sphenoid bones. They do not communicate with the superior maxillary sinus, but with the nasal cavities proper, by four foramina situated under the great ethmoidal volute. Girard was the first to see that three of these, communicate with peculiar sinuses, isolated from each other, and surrounding the orbits; he gave them the name of *orbital sinuses.*

In *sheep and goats*, that region is relatively smaller than in cattle; it is very convex, the frontal does not reach as far as the base of the head, and the fissures do not extend beyond the superior border of the bone. The horns may be absent, and in their place a kind of bony enlargement exists—if their are horns, they have a spiroid or cork-screwed form peculiar to sheep; the goat carries the horns upwards and bent backwards and outwards. The form may vary considerably in the two

species of animals, according to the different breeds. They are often missing, and more so in females than in males.

The fronto-parietal region of the pig, is considerably elongated from upwards, downwards—the fissures exist in the thickness of the two bones.

In *carnivorous*, the region corresponding to the frontal bone, occupies about the middle of the anterior face of the head. In short head breed it corresponds only to the frontal; the temporal regions, enormously developed, unite above the frontal, and bound it above and on the sides; the frontal portion of the head stops a little above the inferior border of the orbits.

SECTION 2.—NASAL REGION.

This is limited superiorly by the frontal region, on the sides by the orbito-palpebral and alveolo-labial, downwards by the point of the nose. It has for base the nasal bones, the anterior portion of the superior maxillary bones; all the part extending from the frontal region to the nostrils is called *superior nasal*, or of *the chanfrin;* the *nostrils* will be described separately.

a.—SUPERIOR NASAL REGION, OR OF THE CHANFRIN.

Much wider superiorly than inferiorly, it is flat in its middle, which represents a kind of elongated V. with the opening turned upwards, the sides run smoothly obliquely outwards, so as to unite with the lateral faces of the head.

The form of that region varies much, according to breed, and even individuals; it is in intimate co-relation with that of the forehead. It ought to be straight and wide. Very often a depression, which gives to the head a peculiar aspect (*rhinoceros head*), is found on a point where the nose piece of the halter passes; this form may diminish the vertical diameter of the nasal cavities, but becomes of some importance only when excessively developed. The *skin* of the nasal region is more movable and loose inferiorly than superiorly. Through it, in the whole extent of the region, one can readily feel and well define all the different parts situated underneath, and thus all deformations, callus, osteitis, &c., can be easily detected. Exactly in the middle of the region, the suture of the two nasal bones, always incomplete inferiorly, is easily detected.

On each side of the branches of the V, representing the median part, one will observe a wide depression, slendering backwards, and continued along the ascending apophysis of the small maxillary bone; on the outside border of the groove, a longitudinal movable promin-

ence is found. This is formed by the fleshy portion of the super-maxillo labialis muscle,* much developed in the middle third of the region; it afterwards diminishes and terminates by a linear sailly formed by its tendons, which can be followed to the point of the nose.

In animals whose skin is fine, and when by artificial excitement the circulation is accelerated, the terminal branches of the external maxillary vein are plainly seen under it. Under the skin there is a thin aponeurotic layer. The most superficial muscular layer is formed by the supernaso-labialis,† rising from the nasal bones by a thin and wide aponeurosis, united posteriorly to the lachrymal muscles, and running towards the commissure of the lips, where it terminates by two branches through which passes the pyramidal ‡ muscle of the nose. A second layer comprehends the super-maxillo-labialis,§ situated upon the sides of the region; its tendon, which continues forwards the fleshy part unite with that of the opposite side, widening to form an aponeurosis which enter into the formation of the superior lip, which by its contraction it raises and turns upwards.

Blood Vessels and Nerves.—The *arteries* are the two terminal branches of the glosso-facial; one ascending towards the nasal angle of the eye, the other descending towards the false nostrils; they are intercrossed with their satellite veins, which, being a little more superficial, pass to the surface of the super-nasolabialis muscle, while the arteries run underneath.

A very large *sensitif nervous fasciculus*, the superior maxillary nerve (superior branch of the trigemini), runs outside the maxillary foramen, and spreading widely, follows the external face of the maxillary bone, mixed up to the inferior arterial ramifications. It is very easy to recognize the spot where the maxillary foramen is located; it can be felt under the skin, at about 1½ to 2 inches forward of the apex of the maxillary spine. Some branches of the facial nerve, whose position is not absolutely fixed, and intermixed with branches of the superior maxillary, brings on power of motion to the muscles.

Differences.—The chanfrin of the *Ox* is straight, and shorter than that of the horse; it spreads slightly inferiorly towards the muzzle. The nasal bones are terminated by two points, and are quite movable; they support a cartilaginous frame, mingling with that of the turbinated bones.

* Nasalis longus labii superioris of Percivall.
† Levator labii superioris alaque nasi of Percivall.
‡ Dilatator naris lateralis.
§ Nosalis longus labii superioris.

In *Sheep*, the region is convex in all directions.

In *Dogs*, it is more developed inferiorly than superiorly. Its length varies in the different breeds, its bony frame does not extend to the nose, but for a length of about 1 inch or 1½ inch, the superior border of the septum nasi only is felt, thus the inferior portion of the nasal fossa has a certain mobility—the whole region is very vascular.

b.—NOSTRILS.

These are the external openings of the nasal cavities. In horses, because of the length of the soft palate, it is the only way through which air can reach the lungs.

The nostrils are openings, elongated from upwards and downwards, and slightly oblique inwards, so as to be nearer to each other towards their lower extremity. They have two lips or borders, and two commissures.

The *internal border* is nearly straight, and is covered superiorly by the *external lip*—this one is strongly convex, and prominent over the surrounding parts. The *superior commissure* is formed by the external lip which curves itself inwards, and then forwards so as to cover internally the internal border. This commissure presents a peculiar diverticulum of the nasal cavities, cul de sac, called the *false nostril.* The *inferior commissure* curves slightly inwards; it presents, at the point of union of the skin with the nasal mucous membrane, the orifice of the *nasal gutter*, inferior opening of the lacrymal canal.

This form of the nostrils, which is that of the animal at rest, is considerably modified during locomotion, or in any other state where respiration is rendered more active. Then the opening increases specially by the spreading of the internal lip, which becomes very concave, and exposes the red internal mucous of the nostrils.

The skin of this region is strongly adherent to the parties underneath. It is covered with abundant short hairs, intermixed with others, long, coarse and rough, true organs of feeling. The interior of the nostrils is also covered with hairs, stiff, but in smaller number. They protect the nostrils from the entrance of dust or foreign bodies, while allowing air to penetrate through them.

When the skin is removed, which requires much care, one finds round the nostrils a strong fibro muscular tissue, perforated, here and there, by the bulbs of the thick hairs already alluded to. There is but one layer of muscular tissue, formed by the terminal fibres of the trans-

versalis nasi,* middle, anterior and small super-maxillo nasalis† inwards, internal branch of the super-naso labialis,‡ and pyramidal of the nose§ outwards.

As annexes of the nostrils we must mention the false nostril, a cul de sac occupying the space situated between the nasal spine and the ascending branch of the small maxillary bone. This pouch has no special uses, it is lined by a black mucous membrane, filled with sebaceous glands.

The nostrils of the horse are kept open by an incomplete cartilaginous frame, formed by two small apparatuses, one for each opening. These cartilages, upon which the muscular fibres are attached, have the form of two commas resting upon each other by their convexity; the wide extremity is superior; it corresponds to the upper part of the internal lip, while the median portion forms this same border. The inferior extremity, narrow, pointed and curved outwards, is situated deeper than the rest of the cartilage, and occupies the inferior middle of the external lip, which, therefore, has only an incomplete cartilaginous frame.

The blood vessels are the last ramifications of the terminal branch of the *glosso-facial*. The nerves are furnished by the facial to the muscles, and to the ligaments by the superior maxillary.

DIFFERENCES.—In the *ox* the nostrils are very different from what they are in horses. They are smaller and, above all, less movable, elongated from outwards inwards, their opening presents the form of a comma whose point is external and slightly curved backwards and upwards. The skin, hairless, has the same structure as that of the muzzle and superior lip. Round the summit of the opening hairs are very fine and short. There is cartilaginous frame only on the superior wing, and even it is rudimentary.

The *dog* has nostrils placed at the very extremity of the head, bound superiorly by a transversal, wide projection. Their wide part is divided by a movable septum, on the middle of which there is a vertical fissure; the point turned outwards turns backwards and upwards. The skin is hairless and rough. The cartilaginous support is formed by two widened elongations of the nasal septum, which occupy only the most internal part of the superior border of the nostrils.

The nostrils of the *pig* mingle with the *snout*. They occupy its

* Dilatator naris anterior of Percivall.
† Nasilis brevis labii superioris.
‡ Levator labii superioris aliaque nasi.
§ Dilatator naris lateralis.

inferior region, are always very small and round. The bone of the snout is their base, as well as two cartilaginous pieces, thick and wide, which from that bone run to the cartilaginous appendages of the inferior turbinated bones, and are continued with those.

[TO BE CONTINUED.]

RINDERPEST.

ITS PROPAGATION.—No. 1.

[*From the National Live Stock Journal, Chicago, Ill.*]

The recent extension of the rinderpest in Western Europe has raised a well-founded apprehension of its importation into the Western Continent; and as our Treasury officials have manifestly failed to appreciate the situation, and have issued orders calculated only to beget a false sense of security, it seems well that the conditions which favor the progress of the plague should be plainly stated, so that our readers may have an intelligent conception of the situation. With a value in live stock approximating closely to $2,000,000,000, and with an annual export of animals and their products amounting—as per last year's statistics—to $120,437,718, we can hardly suppose that the financial department of our Executive can be indifferent to the urgent need of protecting our flocks and herds against the ravages of plagues of foreign origin; and it seems, therefore, that their failure must be charged upon ignorance rather than want of good will. But this view of the matter renders the system only the more preposterous, which intrusts the present and prospective interests of this vast source of national wealth—this one solid foundation of all agricultural prosperity—to the hands of a mere financier, who is utterly ignorant of the exotic pestilences by which it is continually threatened. In purely financial matters, or in those which deal only with inanimate forms of wealth—lands, mines, railroads, manufactures, and the like—a false step may be redeemed with comparative ease; but in the case of pestilence in live stock, the germs may be speedily diffused over our boundless States and Territories, and challenge the most strenuous efforts and liberal outlay of the nation to extirpate them. A sudden loss of material wealth by governmental mismanagement can be fairly appreciated, and its various bearings, and the duration of its

effects, satisfactorily estimated; but the failure to exclude the *plague-germ* implies the steady and constant increase of the poison, by myriads at each successive generation, so long as victims are available for destruction; and unless ruthlessly stamped out, it will be far more widely spread, incomparably more destructive, and have far better prospects for perpetuation at the expiration of a decade, or a century, than at the end of the first year. If agriculturists throughout the length and breadth of the land could be aroused to a sense of the vital importance of this subject, and to pledge every one of their Congressional representatives to use his best influence to effect an improvement, we might soon hope to have legislation on this subject emanating from an intelligent source, our shores safely guarded against the importation of exotic plagues, and successful efforts inaugurated for the extinction of those that have been already introduced.

NO SPONTANEOUS GENERATION IN EUROPE.

We know nothing of the primary origin of rinderpest, nor the conditions in which it is generated *de novo*. In the last century its native habitat was supposed to be the plains of Hungary; later, the steppes of Moldavia and Wallachia were charged with generating it; still more recently, it has been referred to the marshy spots in the extensive Kirghiz steppes; and now, Councillor of State Unterberger, the veterinary professor at Dorpat, who was charged by the Russian Government with the investigation of the subject, with a view to the definite extinction of the pestilence, reports that at no point in European Russia can the disease be found to arise spontaneously, and that the same remark is probably true of the Asiatic portion of the empire. The malady is known among the Tartars as *tchouma*, their name also for a malevolent deity; and as this name has been retained by nearly all adjacent nations (Russia, *tchouma*; Poland, *Dzuma*; Persia, Afghanistan and Turkey, *taoun*; Thibet, *chooneah*), it seems to point to Tartary as its probable source. In China, where it prevails continuously, it has another designation, *low peng*—belly sickness—a nominal distinction which may imply an independent origin of the disease in that country.

Into the neighborhood of Lassa, Thibet, it is yearly imported from the west by yaks and sheep sent for salt; and in Hindoostan, though widely prevalent, it seems also to have an exotic origin. All this is only important as showing that the malady has its origin and point of departure in Central or Eastern Asia, and that, in spite of this, it has prevailed for centuries uninterruptedly in Europe, and has spread more or

less widely, according to the freedom of movement in live stock. The natural corollary is, that having been thus permanently settled on the European continent, where it does not originate spontaneously, it may be domiciled and perpetuated with equal facility on the American, and may prove quite as difficult and expensive to eradicate.

DIFFUSIBILITY OF THE VIRUS THROUGH THE AIR.

The contagion of rinderpest is remarkable in this, that it does not spread very widely through the atmosphere. That the microscopic particles which bear the contagion arise and float upon the atmosphere, there can be no doubt, and that every diseased animal, every carcass, and every fresh product of such carcass, is surrounded by a virulent atmosphere, which will infect all susceptible subjects within its area, is as certain; but this infecting condition of the air is comparatively circumscribed. With a favorable wind and a damp atmosphere (the most favorable conditions), KORBER, STEPANOFF and POZOCKOW found that it did not exceed 800 metres (yards). Prof. HAYNE found that it varied from 30 to 1,000 metres. ABILGAARD sets it down at 108 metres; GERLACH at 40 metres; and ROELL, JESSEN, HAUPT and others at from 10 to 40 metres. Where the atmosphere is still, the shorter distances are nearest the truth; thus, REYNAL mentions that a great number of stables kept healthy within 40 and 50 metres of a badly infected one during the Parisian epizootic, in 1871. In London, in 1866, the experimental stables at the Albert Veterinary College were separated by a wall only from a large dairy, and yet the cows in the latter preserved good health for over a month. More than this, healthy and diseased animals were kept in stables placed side by side, and with their doors opening close together into a confined yard, and the same attendant regularly feeding first the healthy, and then the diseased, yet the former escaped for over a fortninght, until, indeed, a visitor went straight from the sick to the healthy, and infected them.

It must always be borne in mind that the virus may easily be carried long distances on dry hay, paper and other light objects blown by the wind, as well as on the feet of men, quadrupeds, birds and perhaps even insects; but its diffusibility through the air, without any additional medium, is by no means extensive—a fact which should inspire us with the greatest confidence in the measures at our command for checking its progress, and should be our warrant for carrying out these measures with the most unflinching stringency and impartiality.

VITALITY OF THE CONTAGION.

Though easily destroyed when its minute atoms are brought into intimate contact with the air—as in the cases above related—the same does not hold good in conditions in which the materials are closely packed, and where the air is excluded. CAMPER and VIC D'AZYR successfully inoculated the virus from an ox that had died of rinderpest, and had been buried three months. WEISS inoculated the virus successfully after it had been preserved for six years; and HERING also indorses the idea of the vitality of six-year old virus. It is not stated how such virus was preserved, but it was doubtless in capillary tubes, from which all air was perfectly excluded—a condition in which virulent fluids may be preserved almost indefinitely. Thus REMPACH and SERGEJEW preserved the virus for over a year, and then inoculated it successfully. On the other hand, ADAMI has shown by experiments that a three days' exposure in thin layers to the open air and the rays of the sun, at ordinary temperatures, will render it impotent. FRANCK found that the discharge from the nose placed upon a woolen cloth and exposed to the air for six days, was no longer infecting. MUNNICKS found that this material placed in a bottle simply corked, was inactive on the fourth day, having commenced to putrify; its virulence persisted to the eighth day in a hermetically-closed vessel, and to the twelfth day in a vacuum. JESSEN who made a special study of this subject for the Russian Government, has stated that blood and secretions from the eyes preserved in tubes, or between plates of glass, were still infecting on the seventeenth, the twentieth, and in one case, on the thirtieth day. This last case, it will be observed, is an instance of preservation away from contact with the air, and does not in the least invalidate those of ADAMI, FRANCKS, MUNNICKS, etc. It is well established, that when exposed to air, frequently renewed, in microscopic particles, or thin layers, and at ordinary temperatures, the poison is rapidly decomposed and rendered non-infecting; whereas, when air is excluded, it may be preserved active for an indefinite period.

A low temperature serves only to preserve the potentiality of the poison, by retarding decomposition; and frozen products have often conveyed the disease when thawed out. AMPACH records the case of manure from diseased cattle, spread upon the fields in January, and which infected the oxen used to plow in it, after the frost had left the ground in April. A high temperature is, however, fatal to its power, and in experiments, 131° Fahr. has been found to render the matter

harmless. Ordinary variations of temperature above the freezing point, and the varying humidity of the atmosphere, have so little effect on the poison, that their influence need not be considered. We can shut our eyes, then, to these, considered as agencies affecting the propagation of the disease, and take into account extreme high and low temperature only as affecting the virulence of animal products—such as skins, wool, flesh, fat, etc.—the high temperatures rendering such articles safe; the low serving only to perpetuate their virulence.

In the New World we are happily safe from any danger of infection through the atmosphere, and may thus concentrate our attention on the various modes of possible infection through diseased animals, or other objects upon which the poison may be preserved.

IMPORTED STOCK.

The danger attending importation of cattle from infected countries is so patent to all that it would be absurd to insist upon or illustrate this. But as it is on this important particular that the treasury circular of March 22d especially comes short, it will be necessary to say a few words on the subject. The first sentence of the circular formally prohibits the importation of cattle, the last sanctions their importation when *blooded, and accompanied by a consular certificate of non-infection.* Now, a consular certificate is in some sense a precaution, as it presumably, states the number, sex, age and colors of the animals shipped, and affords a ready test as to whether any have perished on the way; but as regards proof of *non-infection* when shipped, it is no better than so much waste paper. The infection in such cases is usually contracted after the start, as from railroad cars, strange stables, infected quays or ships, infected fodder, and the like. In reality, the fact of importation is as perfect a guarantee as any consular certificate can be, as no purchaser would consciously start across the Atlantic with infected animals. But what are the facts with regard to former importations of disease here and elsewhere? The introduction of lung fever into the British Isles, in 1839, was made in *blooded* (Dutch) cattle imported by a friend of the British Consul at the Hague, for the improvement of his home stock. The same disease invaded Sweden and Denmark, in 1847, by *blooded* (English) cattle; Norway, in 1860, by *blooded* Ayrshires; Oldenburg, in 1858, and Schleswig, in 1859, in each case by *blooded* Ayrshires; Austria, in 1858, by a *blooded* (Shorthorn) English cow; Brooklyn, in 1843, by a *blooded* Dutch cow; and Boston, Mass., in 1859, by Mr. Chenery's celebrated *blooded* Holsteins. The *foot and mouth disease,*

which swept over Canada and some of our Northern States in 1870, was imported in two first-class *blooded* Shorthorns, the property of Mr. Cochrane, of Compton, which certainly started sound, were infected in process of shipping, and only showed the disease after having been two days at sea. It is quite needless to follow this subject, these instances must illustrate how vain is the idea that the careful selection of *blooded* stock is a sufficient guarantee of security, and how little we can rely on the best intentions of the importers as a safeguard. In no one instance above mentioned did the owners knowingly import diseased animals, and none could be more anxious than they for the extinction of the malady when its true nature had been discovered. Such instances show no want of care, judgment nor honor on the part of the importers; they merely show that protective measures, founded on the principle of allowing the embarkation of none but healthy stock from an infected country, are utterly inadequate to meet the end in view. To insure the exclusion of diseased animals, we must either exclude all animals without distinction, that are subject to the disease in question, and that come from an infected country, or we must have a clean bill of health for the voyage, describing every individual beast imported, a quarantine of a length proportionate to the period of latency of the disease to be guarded against (in the case of rinderpest one week), and a disinfection of the surfaces of the stock, and of all articles that may be landed with them.

SHEEP, GOATS, DEER AND OTHER RUMINANTS.—Rinderpest, unlike lung fever, is by no means confined to cattle. All ruminants are more or less susceptible to it, and no measures of prevention are reliable, in which this fact is not recognized. And here again, our treasury circular is sadly lame in its provisions. Sheep are referred to, not because they are liable to the disease, but because, like "horses and swine, they may be media for its communication." Then comes the statement, that "the department has no authority under the law to prohibit the importation of horses, sheep and swine"; and the suggestion that these "be examined by experts, and, if necessary, quarantined for a reasonable time." Here we must go back of the present Executive, and consider that state of things which makes no provision for the protection of our momentous live stock interests in case of a threatened invasion of pestilence. The government ought to have an expert as an official, or at least as a responsible adviser; and, above all, it should not be hampered by legislation nor the want of it, but should be invested with full powers to take whatever measures may be necessary to exclude all

foreign animal plagues. In this case of rinderpest, whatever is applicable to cattle is equally so to all ruminating animals imported from infected countries. We might adduce illustrative examples, but the fact of the susceptibility of these animals is so well known to veterinarians that these may well be dispensed with.

OTHER ANIMALS.—The rinderpest is not transmissible excepting to animals with multiple stomachs. Contrary to the opinion of some Canadian legislators, pigs are not susceptible to this pest. For centuries these have mingled with plague-stricken cattle in every country of Europe, but not a solitary instance of their infection can be adduced. A single occurrence has evidently started the misconception in question. In 1865, during the prevalence of rinderpest in the Jardin d'Acclimation, Paris, four exposed peccaries perished with what appeared to be unmistakable symptoms and *post-mortem* lesions of the disease. There is no good reason to doubt that these were genuine cases of rinderpest; but it must be borne in mind that this pachyderm is furnished with a deeply-divided stomach, altogether unlike that of the pig—a formation that closely allies him to the true ruminant; and his implication in an outbreak of the plague cannot invalidate the uniform experience of centuries as to the complete immunity of the hog. Swine, then, like other non-ruminating animals, may be completely exonerated from the charge of harboring the germs of rinderpest within them, and may be freely admitted after the whole surface of the body has been disinfected by washing with a solution of carbolic acid or chloride of lime.

[TO BE CONTINUED.]

EDITORIAL.

To all who are interested in Veterinary Medicine, the progress, that it has made for the past few years, cannot escape attention—that slowly but surely, this important branch of agriculture, has gone forward step by step towards advancement and full recognition, is a fact that no one can deny.

Truly we have not reached the height of perfection—truly one can, as our friend Prof. Law says, meet yet with a large number of men, "who will remove a bone spavin, ring-bone or splint of old standing, and leave the bone in its original smoothness and perfection; who will stop the growth of a ring-bone by cutting out its feeders in the fetlock pad: who will restore any sick cow to sound health, by boring the root of the horn with a gimlet, and rubbing in peppers and other irritants, or who will recuperate the ailing hog by removing unshed deciduous tooth which has become slightly stained with black," etc., etc.—truly this number of quacks can be met with in every part of the country—but still the Veterinary Surgeon, the man of education, *self made*, or coming out of our schools, is rapidly taking his place amongst our people, as the one to whom the care of our valuable domestic animals can be trusted.

Veterinary schools have been established, and are in prosperous condition, and every year a certain number of educated men, come to fill up the ranks of the Veterinary practitioners—Veterinary Societies are here and there forming themselves, with those alumni of the different schools, and are bringing their quota of knowledge towards advancing the profession to which they belong. A Veterinary Journal representing the interests of the profession has been established, and has so far received the best support that any periodical of this kind could expect, in a country where regular practitioners are in the minority, and where humbug, quackery and imposture are in a large majority. All that has been accomplished within a few years, and to-day it seems to us that we ought to feel proud of all that has been done—but it appears also, that a great deal remains to do.

If we look upon the number of persons who are engaged in the practice of the treatment of domestic animals, we can divide it into two large classes:—1st, those who, regularly educated for the profession, and graduated in Veterinary Schools, are, by the fact of the education

they have received, and of the diplomas they hold, the true representatives of the Veterinary profession ; and also, those who, deprived of the advantage of a regular scholarship, have by their exertions, by their self studies and observations, brought themselves with honor to the same level as the regular graduates. 2d. Those who, ignorant and vulgar charlatans and unscruplous empirics, are by cruel and absurd treatment, by exorbitant charges robbing the people of their money, and the poor beasts of their lives, after inflicting upon them the most fearful and unjustifiable punishment, under the false name of medical or surgical treatment.

It is true, that between the two classes, one might find a third one —a kind of bastard who belongs to both, while he belongs to neither; that we may find between them, the graduate who covering himself of his garment of regular member of the profession, do not hesitate, to satisfy his own purpose, to impose upon a credulous public, by using all the means of the charlatan—but this one we may leave to himself. Give him rope enough, and he will unknowingly use it round his own neck.

Amongst the first class, we said, there is a certain number of well self educated gentlemen, men of good reading, of profound observation, men who would do everything to elevate the profession—and now the question has often come to us, is there nothing that the profession can do for them? They may now and then be found belonging to a Veterinary Society; they may by time receive all the official recognition that the regular Veterinarian will obtain through his diploma; they may, by their knowledge and talent, prove themselves equal, nay some times superior to the ordinary graduated practitioner, but still—there is a limit! —why? Because they are not what is commonly understood, as a recognized member of the profession.

But what could be done?

Give them a recognition—put them on the same footing as we are. It seems to us that this is the next duty of the regular Veterinarian.

How to do it? is the question. But we think it could be done in the same way as the human Medical Profession has done for some of its irregular.

If we look amongst many of our States, we will find that each one possesses a number of regular graduates, sufficiently large to organize and form a State Veterinary Society. Could not the same obtain, from the Legislature of their State, acts of incorporation, granting them the power to deliver the Degree of Licentiate to all those who would apply

for such degree, providing they would submit themselves to certain rules and regulations as provided by a Board of Censors of said Society, or of the Society who represents, to a great extent, all the Veterinary interests of the country, the *United States Veterinary Medical Association.*

If this could be obtained—and we have reason to believe that there would be no great difficulty in it, if we can judge from what we know of our own State—if such was the case, what would be the result?—a large increase in the number of the *true* workers of the Veterinary profession, a full and well-deserved reward to many who, by a sense of bashfulness, or from some other cause, hesitate to ask recognition—a great step forward in the advancement of our noble art, and, we believe, a terrible blow to quackery and ignorance.

We offer these remarks merely with the desire of calling the attention of the American Veterinary Surgeons to what we consider but a step in the right direction, and hope to hear from many of our correspondents on this important subject.

ANATOMY OF REGIONS.

Our English Veterinary literature has for the last few years been considerably increased, thanks to the continued exertions of a few English Veterinarians, and principally, not to say almost entirely, of Mr. G. Fleming; and we feel it our duty to take example, and to try to give our quota towards it.

To that effect, as soon as the *Prêcis de Chirurgie Vétérinaire*, of Peuch & Toussaint, was published, it has seemed to us that a part, if not the entire work, would prove of great interest, and be beneficial to the American practitioner. We are glad to-day to announce that we have obtained from the authors of this excellent work the authorization to publish in the REVIEW the portion of the book which treats of the Surgical Anatomy of the Domestic Animals.

Offering, as this does, an excellent means of reference in cases of important surgical operations, it will be found by all practitioners, old and young, an excellent way of refreshing their minds in a study, which, practised but little when out of college, is of such importance in the successful performance of an operation.

We begin, to-day, the publication of this translation, and hope that it will prove interesting and advantageous to our readers.

TRANSLATIONS FROM GERMAN PAPERS.

HŒMOGLOBINURIA IN HORSES.

By Bollinger.

[*Concluded.*]

Of the three important symptoms of this disease (hœmoglobinuria, albuminuria, and paralytic condition of the hinder extremities), the hœmoglobinuria (1) is regarded as the most characteristic. It is usually considered as hœmaturia (bloody urine), in which condition, however, the urine is never lake colored, and microscopically red blood corpuscles can always be found. In hœmoglobinuria, on the other hand, the filtered urine has a peculiar lake color, like red wine, and contains no red blood corpuscles, but soluble hœmoglobin—the substance forming the chief constituent of the colored corpuscles, which can readily be detected by the spectroscope. Franck was the first to draw attention to this fact; and to show that the destruction of the blood corpuscle and solution of the coloring matter did not take place in the urine but in the blood itself; thus proving a change in this fluid to be a primary step in the process Reference is made to the interesting experiments of Ponfick, showing how this condition is produced after the injection of a certain amount of the blood of one species of animal into the veins of another. The foreign blood acts as a sort of poison, causing destruction of the red corpuscles, and freeing the hœmoglobin, which escapes in large quantities with the urine. So long as the amount to be excreted is not too large, the kidneys do not suffer; but if considerable, anatomical changes are produced in these organs, an inflammatory condition arises, with great exudation into the tubules, rendering further excretion impossible and death results.

(2.)—As is well known, not only hœmoglobin, but also tube casts, consisting of albumin, epithelium and granules, are found in the urine, indicating with certainty that an affection of the parenchyma of the kidneys exist—a desquamative nephritis or acute Morbus Brightii. Depending upon this and strengthened by the examination of the diseased organs, many observers regard an inflammatory state of the kidneys as the essential element of the disease; but this afforded no explanation of the accompanying hœmoglobinuria.

In very severe cases of Bright's disease, hœmorrhage from the kidneys sometimes takes place, but a primary albuminuria with consecutive hœmoglobinuria is as yet unknown. Our knowledge of the essential changes in the disease in question has been considerably advanced by the above-mentioned experiments, which have shown in the clearest manner that by certain means—the transfusion of foreign blood—hœmoglobinuria may be artificially produced, and in its turn excite an acute Morbus Brightii. So in this affection the desquamative nephritis may arise, not alone from the increased exercise of the function of the kidneys consequent upon the amount of hœmoglobin to be excreted, but the unknown "something" which produces the hœmoglobinuria disturbs, probably, the nutrition of the parenchyma of the kidney, as it does that of the liver and muscles.

(3.)—The paralytic weakness of the hinder extremities, which often appears to usher in the disease, and which is regarded by many authors as indicating the existence of some affection of the cord or its membranes, is believed by Dr. Bollinger to depend upon the intense edema and resulting degeneration of the inner and superior lumbar muscles, as described in case III. The only changes found in the cord have been slight hyperamia of the membranes and increase of the sub-arachnoideal fluid. If the paralysis was spinal in its origin—as held by most writers—unilateral palsy of one limb would not be so frequent; there would be disturbance of sensation—anæsthesia—and also involuntary discharge of the fæces and urine. The possibility of the lumbar region of the cord being involved in the collateral edema must also be taken into consideration, and in such cases anasthesia would be combined with the paresis.

The author believes the essence of the disease to be in a primary blood change, which produces, first, hœmoglobinuria; secondly, an acute nephritis with albuminuria; and, thirdly, by collateral edema of the lumbar muscles, and, perhaps, the lumbar portion of the cord—a paralytic condition of the hinder limbs. The very evident changes in the blood, internal organs and muscles, point, with the hœmoglobinuria, to some poison or poisonous material as the cause of the whole process against the view held by many authors that the disease is induced by "catching cold" are urged, the sudden, sometimes apoplectic form, onset of its violent course, the wide-spread alterations in the organs of the body, and, further, its enzootic appearance and geographical extension. It is most prevalent in South and Southwest Germany, rare in North Germany and Austria. In Vienna, according to Rõll, it is an

exceedingly rare affection. In Denmark, it is known as spinal-typhus; in Holland, as lumbar-typhus.* It would appear probable that we have to do here with an infectious disease, in which the poison, as in other diseases of this kind, is reproduced and increased either inside the diseased bodies or outside of the same. None of the numerous observers make mention of any contagious nature in the affection, and Dr. Bollinger, in some experiments upon other animals, had negative results. In Denmark, however, spinal-typhus, which appears identical with this disease, is treated as if contagious.

By many observers the injurious material is thought to be taken in with the food or drink, especially certain sorts, as sour hay, or hay which has become musty or attacked with fungi. In certain regions (Baden, Holland) it has been sought to connect the disease with the feeding of beet-root and mangel-wurzel to the horses. The view, that the *origo mali* is to be sought in the food, receives support from an analagous condition met with in cattle. In them a form of bloody urine exists, which, in many cases, is a true hœmoglobinuria, induced by certain foods, and feeding in certain meadows. Gerlach states that it is a blood disease, in which the corpuscles are dissolved and the coloring matter escapes with the urine. The same is caused by eating decomposing straw and frozen beet leaves.

No explanation can at present be given of the fact that the disease attacks horses which have been standing idle for a few days in the stable.

It is advised as a prophylactic measure, in regions where this disease is common, to pay special attention to the quality of the food, as there is a possibility of the introduction of the materies morbi by this channel. As a therapeutic means bloodletting has been much employed, but it is doubtful if, in blood poisoning of such an acute character, it can have much influence. Adam, in South Bavaria, in a number of cases, found it injurious, and Kolb and others believe that it hastens death. This is a point upon which careful observations are much needed. Where acute urœmia is threatened, owing to complete obstruction of the tubuli uriniferi and consequent suppression of urine, copious diuresis should be established. Finally, the author proposes the name "toxic hœmoglobinuria" as a substitute for the other names of the disease, believing that it expresses better than any other the nature of the affection.

[*Condensed from Deutsche Zeitschrift f. Thiermedicin, Bd.* 3, *Hfb.* 3.]

* I am informed by Principal McEachran that it is quite a common affection in Canada, being noticed more particularly in the winter months.—W. O.

REPORTS OF HOSPITALS.

NOTES ON INTERESTING CASES.

By W. J. Coates, D. V. S., House Surgeon of American Veterinary Hospital.

Idiopathic Tetanus—Treated by Prussic Acid and Alcohol—Recovery.

Case I.—A bay mare, nine years old, was taken out early to do her usual work, when she was noticed being stiff in walking. When admitted, her symptoms were those well marked of tetanus—spasms of the muscles of the body, elevation of the tail, trismus, salivation, nostrils dilated, on the slightest excitement protusion of the membrana nictitans, and a straddling gait when made to walk. Carefully examined for any traumatic lesion, none could be found. The treatment consisted in keeping her bowels open, diluted alcohol in from two to four oz., three times a day, and hydrocianic acid three ter die in one drachm dose increased slowly to two drachms, perfect quietness. Towards the third week she began to improve rapidly, and was discharged on the fifth week. During the whole disease, the temperature did not rise above 100⅘ degrees Fahr.

Case II.—Another bay mare which, having been sold, was in the dealer's stable waiting for her owner to take her away. One morning she was found stiff when backing out of her stall. She was left without treatment for four days, and then sent to the hospital of the College. She presented all the symptoms of idiopathic tetanus ; not the slightest scratch could be found on her body. The spasms were with her more violent than in case No. 1 ; in fact, she was perfectly blind by the constant presence of the membrana nictitans over her eyes ; her jaws were closed tight, and her difficulties to take food, liquid or solid, were very great. Her treatment consisted in hydrocianic acid, from half a drachm increased to three drachms three times a day ; diluted alcohol, from eight to twelve ounces a day, and rest. At the beginning of her trouble, she also received chloral hydrate, four drachms twice a day, but this was not continued. About the beginning of the fourth week she showed improvement, and was discharged at the end of six weeks. Perfect quietness was carried with her as much as possible. Her highest temperature was 100⅘ Fahr.

Pelvic Abscesses—Death.

A bay gelding, 6 years old, bought to auction, was some two months later found lame on the near hind leg. Having on the hock of that side a large bony deposit (spavin), he was treated for hock lameness with actual cautery and blister. About three weeks later, when ready to be turned out, his tail was found to be much swollen and painful, the sheath considerably swollen also. The enlargement of the tail soon became soft, suppuration detected, and allowed to escape by two free incisions; about one pint of pus escaped. Two days later another abscess formed on the right side of the anus, then another on the left, running into the pelvic cavity. Both were open, much pus escaped, and soon were healed. He was considered convalescent, when one morning he was noticed to stand with his hind legs stretched out as if in the act of micturiting, looking towards his flanks; began to lose his appetite; pulse became soft, 48; his temperature raised to 101⅘ Fahr.; on rectal examination a large abscess was found on the inferior face of the sacrum, which was emptied at once, with the aspirator, of about five ounces of pus. The operation being somewhat difficult, as it was found necessary to introduce the whole arm in the rectum before the puncture could be properly made. On the next morning his pulse had raised to 50; his respiration, 14; and temperature to 102. He stands very quiet. Rectal examination shows the abscess quite full yet, but having a tendency to run backwards, and become more superficial. In the night he fell down, and was unable to get up. His pulse was 70, hard and weary; his breathing much accelerated; his temperature, 104⅘; at 3 o'clock, A.M., he died. During his sickness, general treatment consisted of salicylic acid, camphor and gentian; local treatment to the abscesses.

On *post-mortem*, the abdominal muscles were pale, and showed two abscesses in way of formation near the sternum. The intestines and mesentery were much congested. On the roof of the pelvic cavity a large abscess, holding FORTY ounces of pus, was found, and communicating with smaller ones in the pelvic cavity and in the psoas muscles. The inferior face of the sacrum is laid bare by destruction of the periosteum and is carious. The large nervous trunks of the lumbar plexus are highly injected, and their substance look softer. All the other organs were healthy.

Epithelioma of the Penis—Amputation—Recovery.

A black gelding, twelve years old, was brought to the hospital, June 18, 1877, suffering with difficulty of micturition. On examination

a large epithelial growth of the head of the penis was found, with four or five smaller ones about five inches above the first one. This gave rise to a very offensive and abundant discharge which, with the constitutional disturbance, were rapidly undermining the poor horse. Amputation being decided upon, he was thrown down and etherized, the penis drawn well out, and a catheter introduced into the urethra, the skin drawn down over where the incision was to be made, so it would not cicatrize over the urethra, and close it up. The incision was made, cutting off about six inches of the penis. No artery requiring ligature, the edges of the sheath being brought together on the corpus cavernosum of the penis, and down below with the mucous membrane of the urethra. A catheter was then held in position by strings tightened over the back, and was allowed to remain in place for five or six days, when finding the animal passing a full and free stream of urine, he was discharged convalescent. Much swelling of the sheath took place which subsided by cold water showering.

CORRESPONDENCE.

HŒMOGLOBINURIA.

MR. EDITOR:

Oh! what a name. Shades of departed lexicographers, what would the living Webster or Dunglison have said to such a name for such a disease.

Mr. Editor, are Veterinarians justified in searching over the ash heaps of the dead languages, to find names for symptoms or conditions of the animal that are the direct result of mismanagement? I think not. We have enough of disease, specific or otherwise, to grapple with, without dignifying the results of mismanagement in the stable with such a high-sounding name as "hœmoglobinuria." Since I have been in business in the city of Rochester, a period of thirty-two years, I have had to treat quite a number of cases of this "hœmoglobinuria," as our author names it; I never thought to give this diseased condition such a fearful name. Why, Mr. Editor, let us rather try to simplify the names required in our *noble art*, and use good Anglo-Saxon words that all may understand, in speaking and writing of our cases. Rather than to imitate the quack and empiric who try to astonish the public with their immense acquirements by using high sounding words and phrases.

This condition, as described by our author, is never found in the regularly worked and properly fed horse. But always is found, when found at all, after a period of several days' confinement to the barn; and then only when the animal is fed the full quantity or more of food that he should have when at work, and possibly food of the richest character in all the elements that go to build up the horse. The consequence is the blood becomes surcharged with carbon, fibrin, and other elements eliminated from the redundancy of rich food which renders it unfit for circulation. The nervous system suffers in proportion to this blood derangement, and under these circumstances, the animal is put to work. His spirits rise in anticipation of escaping confinement; the circulation of the blood becomes more active; the actions of the various organs of the body, particularly the *kidneys*, increase. He is harnessed and starts, but does not get ten rods from the barn, perhaps, before he comes to a stop, or gives such evidence of being unwell that the veriest dolt could see it. The driver perhaps thinks he has got the "belly-ache." He reasons thus, the horse has been idle some days and has filled himself too full, a sharp drive will do him good. The whip is applied; he is forced to go a longer or shorter distance. And likely this occurs miles away from an intelligent Veterinarian. Thus several hours elapse before assistance worth having arrives. The period is past when remedial measures can be of any use, and death closes the scene. I think that "*engorgement*" of the *kidneys* would be a better name for the diseased condition described by our author than hœmoglobinuria.

Respectfully yours,

WM. CUTTING.

ROCHESTER, N. Y.

A MOLAR EXTRACTED FROM THE TEMPORAL BONE.

Editor of A. V. REVIEW:

DEAR SIR:—The following case, being of somewhat rare occurrence, it may possibly be worth recording in the REVIEW.

About a month ago, I was consulted by Mr. A. Van Inwagen, of this city, respecting a four-year old colt (which had recently come into his possession), and which had a fistula at the base of the right ear, which had existed for over three years, and had been under treatment by an empiric for the last six months without effect.

On passing a probe up the sinus, which was straight, I detected that at the bottom was an apparently bony substance, which I at first

thought was probably an exfoliating piece of the temporal bone; but, on second thought, it occurred to me that, possibly, it might prove to be one of those interesting dental tumors which I had seen recorded, but had never met with. An operation was decided on. A crucial incision was made over the tumor, and at the depth of about an inch the black crown was exposed pointing upwards; and after exerting pressure on the sides of the tumor in different directions with a chisel it was extracted with the forceps. A little tr. of iodine was occasionally injected into the cyst in which it was lodged, and in about two weeks the part was quite healed. The tumor proved to be composed of tooth substance, and in shape very much like a molar, was about twothirds the size of an ordinary molar tooth with imperfectly developed fangs, and was firmly attached to the temporal bone and surrounding structures.

I am, etc.,

NICHOLAS VASEY, M. R. C. V. S.

ROCKFORD, ILL.,
June 18, 1877.

VESCICAL CALCULI—CYSTITIS—DEATH.

SPRINGFIELD, July 17th, 1877.

MY DEAR DOCTOR:

I send you by express to-day the penis and bladder of a dog which recently died under my care; he was owned by a Mr. J. Hunter, of your city, and it is possible that he may call upon you to see it. I saw him first at about 10 o'clock on the night of the 12th inst.; penis was swollen as you see it, and of a deep, mulberry color, dribbling of bloody urine; examination showed a calculus lodged just at the back of the meatus in the urethra (you will see the spot): this I crushed and removed next morning, the urine continuing in drops and bloody; I passed catheter (passage was free) into the bladder, and no calculi could be sounded; three or four ounces of effusive bloody urine were evacuated through the catheter, the bladder washed out with tepid water, and a solution of carbolic acid, 1 part to 200 parts of water, all being thoroughly evacuated by manipulation; symptoms still continued, with increased fever. At about 4 P. M., temperature, 103½ F.: pulse, 184; breathing, quick. About 5 o'clock, bladder again washed out, sounded, etc., with apparent relief. He died at about ten in the evening. On the 14th, *post-mortem*, Sunday morning; results as you will see. He died of pyemia, the prostate being full of pus, as well as the whole parts being more or

less in a gangrenous condition. Query—Did the few small calculi cause all the trouble, or were the calculi the result of a long standing disease of the bladder? I am inclined to take the latter view, from the thickened walls of the viscus, etc.; also, that retention was caused by paralysis, and that the calculus found in the meatus gravitated there by distention. Please give me your views of the case, either in the REVIEW or personally.

Yours very truly,

C. P. LYMAN, V. S E..

REMARKS.—From the careful examination of the specimen, we are inclined to believe that the original trouble was the formation and pre sence of the calculi, which gave rise to inflammation of the viscus (cystitis), a common affection in dogs; and that the retention of urine was due to the presence of the calculus in the meatus, thus interfering with its exit.

HYPOSPADIAS.

Editor of VETERINARY REVIEW:

It was my privilege to-day to make a partial *post-mortem* examination of an animal of the equine species, to which the term *hermaphrodite* has been applied; and since it does not fall to every Veterinarian's lot to make such an examination, I make you a report of the case. On the morning of the 17th I was called to see the animal, and found it down, and unable to regain its standing position; had been so for seven hours. For a long time past the near hind limb had been favored at time of starting from stable, and there was always difficulty in getting up from the near side. On Saturday morning, the 14th, assistance was necessary to enable the animal to get up, it having been lying upon the near side. Upon making a rectal examination, found the posterior aorta obliterated at its termination, and an aneurismal sack anterior to the obstruction. The posterior extremities were cold, yet retained perfect sensation, while all the assistance rendered failed to enable the patient to get up. Believing treatment useless, little was done, and the animal died this morning at seven. In making the rectal examination, two testicles were found at the upper part of the inguinal canal, so that he, at least, was a *male*. In making the *post-mortem* examination, the testicles were found to be but very imperfectly developed, about the size of an ovary, and resembling this organ in structure more nearly than that

of a testicle. About three inches below the anus a slit commenced, which extended down to the anterior border of the pelvis, was an inch and a half deep, and lined with mucous membrane. The glans penis was well developed except that it was imperforate. Instead of being ensheathed in the prepuce, which was entirely closed, it was situated at the anterior or inferior commissure of the mucous lined slit, which was apparently a vulva. The urethra passed over the ischial arch, and emptied at the superior commissure of the false vulva, and the only thing remarkable about the case was the failure upon the part of nature to close the urethra all the way to the glans penis, while the prepuce was imperforate, and the testicles but slightly developed.

A. A. HOLCOMBE, D.V.S.

REMARKS.—The vice of conformation above described is undoubtedly a case of hypospadias, consisting in the malformation of the urethra which remained open at the inferior border of the penis, instead of extending to the head of the organ. When the opening is situated near the root of the penis, the scrotum is sometimes divided on the median line, and presents on the sides folds which resemble a vulva, and thus has the individual been looked upon as a hermaphrodite. Hypospadias is the result of an arrest in the development of the penis during the first months of gestation.

VETERINARY EDUCATION.

Editor VETERINARY REVIEW:

I met Mr. Stalker, of Iowa, in New York early in 1876. I remember him as a very pleasant gentleman and scholar. I respect him for his ability, and believe him a worthy member of the profession to which he has been lately admitted. But did he earn, as others must, except at Toronto, the degree which he now wears? Dr. McEachran was right in his criticisms upon the subject, and will receive the support of all who believe in raising the standard of our profession to where it belongs. The curriculum of the American Veterinary College says a "certificate of three years' study of medicine," and "attendance upon *two full courses* of medical lectures" are necessary before the students can apply for the diploma of the school. Mr. S. attended but a part of a course of lectures at this college, as he himself indirectly acknowledges in his letter in the July number of the REVIEW.

Before he could have obtained the diploma of this school, it would have been necessary for him to attend *two more full courses*. At Toronto, we are told, "two courses, at least," are necessary to obtain the diploma. If Mr. S. had not taken a course of lectures anywhere else, how comes it that one course suffices for him at Toronto? Is there a royal road to graduation there in which either brains or money can pass? Can my friend gain admission to the profession at Toronto, because he has more ability than I, in less than the prescribed time? Are the "two courses, at least," intended only for us poor mortals who have less brains than Friend S.? Something is wrong somewhere? Where is it? Will Dr. Smith tell us?

L. L.

PURPURA HÆMORRAGICA, NECESSITATING TRACHEOTOMY ON THE FIFTH DAY.—TREATED BY STRYCHNIA.—RECOVERY.

On the evening of April 21st, 1877, I was called to see a black gelding, about 15¾ hands and mouthed 8 years, of a nervo-lymphatic temperament, who had refused feeding that evening, and developed a slight swelling on the inside of right thigh, and supposed to be a strain. Inspection by candle-light revealed an abrupt termination superiorly of the swelling, but no tenderness of the lymphatics higher up the leg. Examination of the visible mucous membranes revealed ecchymosis, but to a very slight extent, in fact only the size of pinheads, and very few *punctas*; sufficient however to indicate purpura hæmorragica. Pulsation, 60; respiration, 20 per minute; temperature, per ano, 105 degrees. History prior to the present attack, some three weeks animal had suffered from influenza, and was depleted, *ad libitum*, during a period of two weeks by a daily administration of four ounces of sulphate sodæ. This method of treatment seemed in their estimation a *panacea* for all the ails horseflesh is subject to.

Having a desire to try the action of strychnia, it having been advocated by a brother member of the profession some two years ago, I placed the patient under half grain doses of strychnia every two hours during the night, and requested the leg fomented as often as possible.

On the morning of 22d, animal quiet, both hind legs swollen from the hocks up; respiration and pulsation the same as previous day; temperature, 104⅘ degrees. Eats a little. Prescribed ¾ grain every three hours during day and night; swellings to be fomented frequently, and

stimulating embrocation applied, composed of one part canthar. tinct. sapons. tinct., parts three; and requested careful handling on the part of attendants, so as to try and prevent unpleasant swellings around head.

On morning of 23d, respiration, embarrassed; pulse, quick and strong; temperature, 103 degrees; urine contains albumen. Prescribed one grain every four hours; same local treatment.

On morning of 24th, respiration, labored, 24 per minute. Animal a little excited; the swelling extending along the inferior line of abdomen; sheath swelling, and anterior extremities becoming large from the carpus up; none below the carpal and tarsal regions. Animal refuses dry food; eats grass and drinks oatmeal gruel. Stands in one position, but looks bright and cheerful. Temperature, 102⅘ degrees. One and a half grains every four hours; no change in local treatment.

Evening of 24th—Slight swelling around nostril and sheath greatly swollen; scarified both extensively, making some deep incisions. Respiration labored. Animal ate nothing all day but drank some gruel; requested four ounces of brandy in gruel per rectum every four hours, and discontinued balls of strychnia from the trouble in administering due to swollen condition of lips, and to increase the hot fomentation to parts swollen. At this period, there seemed a bloody sweating over the surface of the swollen parts. Morning of the 25th—Head frightfully swollen and shapeless, eyelids closed, nostrils almost closed, respiration performed only with the greatest difficulty, animal greatly excited, membranes purple, pulse hardly perceptible, asphyxia threatened, temperature 103⅕ degrees. With the consent of the owner I performed tracheotomy in the usual manner, with this exception, that, instead of dissecting out a circular piece of the trachea, I cut downwards through several rings, dilated the cut edges, and almost with the first respiration of air the animal became easy, membranes cleared, showing perfect oxygenization of the blood. When a tube is to remain only a short time in trachea I prefer making incision through several rings, as cicatrization takes place sooner, and there will be less deformity. Two grains of strychnia every twelve hours was requested to be given. Animal allowed milk and eggs in gruel as often as required, and enemas of brandy every three hours in gruel to support patient; swollen parts to receive constant bathing and rubbing, and bedding to be wet frequently with water to allay dust, and a little chloride lime sprinkled around the stall, and the tube to be cleansed with a five per cent. sol. carbolic acid in oil every two or three hours.

P. M.—Animal looks bright; respiration easy; has drank several pailsfull of gruel through the day, and tried to eat a little grass, but jaws are too stiff; temperature, 101½. Morning of 26th.—Swelling subsides around the face, and has eaten a little crushed oats and grass; skin at the back of carpal and in front of tarsal region cracking, and a sanguinous fluid escaping; also large discharge from sheath; requested parts to be bathed with a sol. carbolic and oil after hot water bathing. Tube to be removed and cleansed twice a day, and annointed with sol. carbolic acid and water before insertion. Two grains strychnia every four hours, and same local measures. A slight swelling around tube, but hot water bathing holding it in check. P. M. 27th.—General appearance good; swelling around face almost gone; around legs and sheath becoming smaller; breathes pretty well through nostrils; slight hemorrhage from nostrils and urine bloody, and stools, first hard and dark and then soft; has had slight colicy pains. Gave tinct. opii, oz. *i*, acidi. sulph. dil., drs. *ii*. in oil, and to be repeated, if necessary, every two hours until easy. A fatal diarrhœa, when the swellings disappear rapidly, has proved destructive in many a patient with me, and such is the history of Purpura Hæmorragica gleaned from medical works

Requested animal to receive during day three balls, containing in each strychnia ℊ*ii*., ferri. sulph. dr. *i*., gent. 9*s*. During the day has eaten several small feeds of oats—in all four quarts—some grass and hay; also eaten and lay down for the first time, and arose without help. Temperature, 101½. From this day, until the 3d of May, nothing of note occurred. Swelling rapidly disappeared. Some few bed sores formed on the exposed angles, which were treated by having hot and then cold water dashed on them, as recommended by Brown-Sequard, but proved easy to eradicate. On the morning of the third I removed the tube, and brought the edges, after scraping them, together by the deep, as well as superficial sutures. Feeling satisfied with the action of strychnia I had patient placed under sol. arsenicum, Fowler's, grains 5 in day, and given sunshine baths. Removed sutures in seven or eight days, and the granulations touched with nitrate silver a few times. On May 16th, discharged, looking very fine, particularly about the face and legs.

I remain, respectfully yours,

R. W. FINLAY, V. S.,

VARIETIES AND NEWS.

HORSES IN EUROPE AND AMERICA.

The number of horses in the various countries of the European continent and in the United States has been estimated as follows: In Russia, 16,160,000; North America, 9,504,200; Germany, 3,352,231; Great Britain, 2,790,851; France, 2,742,738; Austro-Hungary, 3,569,434; Italy, 657,544; Norway and Sweden, 655,456; Spain, 382,000; Denmark, 216,570; Belgium, 272,163; Holland, 260,056; Switzerland, 100,934; Greece, 98,938; and Portugal, 79,616; making a total in the countries mentioned of 40,854,840.—*Veterinary Journal.*

America, according to this statement, holds the second rank amongst civilized nations for the number of her horses. If we look at the number of those who are to be trusted with their care—to the number of Veterinarians—in what rank would she be placed?

SALICYLIC ACID AND SWINE PLAGUE.

A Saxon Veterinarian successfully employs this acid internally, and also in the form of enemas (1 to 250 of water) in the treatment of this malady. It is also recommended in the treatment of auricular catarrh in the dog with sulphuric acid—five centigrammes of the acid to five grammes of water are sufficient for one ear.—*Veterinary Journal.*

FREE SCHOLARSHIP.

The offer of the free scholarship to the State Agricultural Societies of the United States made by the Board of Trustees and Faculty of the American Veterinary College seems to have met with cordial notice from the different societies, and several students will probably take advantage of the free tuition.

CASTRATION OF CRIPTORCHIDS.

During 1876, Mr. Degive, a Veterinarian of Belgium, has castrated 7 criptorchid horses, three affected with inguinal, and four with abdominal criptorchidy. He only lost one of these last.

THE OLD QUEEN of the trotting turf, Flora Temple, now thirty-two years old, is reported to be failing rapidly.

CANINE STATISTICS IN NEW YORK.

Nearly 4,500 dogs have been captured since the re-enforcement of the laws on dogs, and about 11,631 have been licensed at the City Hall; making a total of over 16,131 dogs in the city of New York alone.

SPECIMENS.

SENT FOR THE MUSEUM OF THE AMERICAN VETERINARY COLLEGE.

75. Fractured Os Suffraginis.....A. A. Holcombe, D. V. S.
76. Fibrous Tumor from the Superior Cervical Region of a Cow..... F. B. Fermler, D. V. S.
77. Bar Shoe for Treatment of Quarter Cracks and Corns.....W. Cutting, V. S.
78. Hair Calculus taken from a six weeks old Calf, weighing ..... W. Rose, V. S.
79. Champignon of Left Spermatic Cord..... W. J. Coates, D. V. S.
80. Urinary Apparatus of a Dog; showing Chronic Cystitis and Diseased Prostate.....C. P. Lyman, D.S.E.
81. Urinary Vesical Calculi of the Same..... "

EXCHANGES.

Scientific Farmer, Boston; American Agriculturist, N. Y.; Country Gentleman, N. Y.; Live Stock Journal, Chicago; Medical Record, N. Y.; New Remedies, N. Y.; Archiv fur wissenchaftliche und practishe thierkeilkunde, Berlin; Annales de Medicine Vétérinaire, Bruxelles; Hospital Gazette, N. Y.

COMMUNICATIONS RECEIVED.

A. A. Holcombe, N. Y.; W. Cutting, Rochester; L. L., N. Y.; Prof. J. Law, Ithaca; F. S. Billings, Berlin; C. P. Lyman, Springfield; Dr. W. Osler, Montreal, Canada; R. W. Finlay, N. Y.